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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,999	09/27/2001	Horst Berneth	MO-6633/LEA 33,661	8752

157 7590 08/26/2005

BAYER MATERIAL SCIENCE LLC  
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EXAMINER
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ANGEBRANDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 08/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/937,999

Applicant(s)

BERNETH ET AL.

Examiner

Martin J. Angebrannt

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 6/13/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3,6,11,13,14 and 19-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19-21 is/are allowed.
- 6) ☒ Claim(s) 1-3,6,11,13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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1. The response by the applicant has been read and given careful consideration. Responses to the argument of the applicant are presented after the first rejection to which they are directed. Rejections of the previous office action not repeated below are withdrawn based amendments to the claims or the terminal disclaimer. The amendment to the specification is approved. The seemingly partial rejection of paragraph 3 was a typographical error and should not have been present as that line of rejection had previously been dealt with.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3 Claims 1-3,6,11 and 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims treat the polymers containing the anisotropic group (b) and the polymeric azo dye (a) as two different polymers. The language concerning x and y as being 100% seems to amplify this. The specification indicates that the polymer bearing the azo dyes also contains the moieties exhibiting anisotropy bound to the polymer preferably by a spacer. [0067 in prepub]

It seems that the claims should not be introducing a second polymer, but should include the monomers as one of the components of the single polymer and clearly indicate that the polymer contains both azo moieties and anisotropic moieties and possibly the acrylate/methacrylate moieties.

4 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3,6,11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieringer et al. '846, in view of Berneth et al. DE 19703132 and Savant et al. '221.

Bieringer et al. '846 teach the use of copolymers of I and II as shown in column 2. The preferred monomers of II are disclosed with respect to formula VIII. The examiner notes that this overlaps with formula IX (col. 7) where  $X^3$  is O, J is zero, and  $T^2$  is  $(CH_2)_n$  and  $S^2$  is the same as those disclosed in column 2 of the reference. (see also the general formula VIII), the use of acrylate monomers in the co-polymer is also disclosed (8/10). The ratio of the groups is disclosed (7/38-47) as is the MW (8/35-38). The use of these in optical recording and holography is disclosed (10/29-61).

Berneth et al. DE 19703132 disclose the copolymers on pages 10-15. These are evaluated on the basis of their absorption maxima when coated 0.9 microns thick on a glass substrate and written upon using an argon ion laser at a laser power of 250 mW (9/5-9). See dye monomer on 14/5 (upper dye of formula 8 and the same as that used in XIX of instant specification on page 20), dye monomer at 14/20 (lower monomer of formula 8, and similar to that used in dye XIX of instant specification on page 21.) and dye monomer at 13/30, lower monomer in formula 7 and identical to that at 11/8 used in dye XIX of instant specification on page 21.) The use of the (meth)acrylate monomer is also disclosed as XVI on page 6.

Savant et al. '221 in example V describe the azo dyes bound to a polyethylene vinyl alcohol backbone and coated to a thickness of 10 microns. Examples XIII to XX describe thicknesses of 10 to 150 microns (0.1 to 0.15 mm) with dye loading concentrations of 10% as the

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best (23/53-55). The storage of multiple holograms in the same spot by controlling the angle between the incident (object) and reference beams is disclosed. (25/46-57 and 7/11-15). Suitable polymers are disclosed in columns 8-10. Useful azo dyes are disclosed in columns 9-17. The formation of thicknesses of 10-1000 microns by spin coating is disclosed. (18/51-66). The lowest layer in figure 3 is a reflective layer.

It would have been obvious to one skilled in the art to modify the examples of Bieringer et al. '846 by using similar azo dyes, such as those disclosed by Berneth et al. DE 19703132 with a reasonable expectation of the medium functioning based upon the disclosures of the two media recording based upon anisotropy and further it would have been obvious to modify the result by coating the film thicker and adding a reflective film as taught by Savant et al. '221 to allow the reading of data by reflection as shown in figure 3 and increase the sensitivity if the medium due to the increased absorption due to the increased thickness as described in Beer's law.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The motivation to increase the thickness and add a reflective layer is clear. The position that Berneth does not teach photochromic side groups is entirely without merit as the use of azo based dyes appears throughout. The examiner points to those side chains on pages 9-15. The teachings of over Bieringer et al. '846 and Berneth et al. DE 19703132 actually overlap quite nicely, particularly when noting that they teach a number of the same side chain azo moieties. (uppermost dye on page 9 of Berneth and dyes in column 5 and 6 of Bieringer. The references all deal with the use

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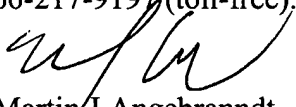
of azo dyes for optical recoring and therefore they are properly considered analogous. The chemical similarity of the materials and the reasonable expectation of forming a useful optical recording material supports the examiner's position. The rejection stands.

5 Claims 19-21 are allowable over the prior art.

6 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J Angebranndt  
Primary Examiner  
Art Unit 1756

08/22/2005